

REMARKS

Status of the claims:

With the above amendments, claims 1 and 10 have been amended. Claims 1-3 and 5-14 are pending with claims 3, 6-9, and 11 having been withdrawn from a previous restriction requirement. No new matter has been added by way of the above amendments. Support from the amendment to claims 1 and 10 can be found at page 7, lines 1-3. Reconsideration is respectfully requested in light of the following remarks.

Rejections under 35 USC §102

Claims 1 and 10 are rejected under 35 USC §102(b) as being anticipated by Sargent '850 (US Patent No. 5,316,850). This rejection is traversed for the following reasons.

Sargent '850 fails to disclose or suggest the instantly claimed triazine ring compound. Accordingly, Sargent '850 fails to disclose or suggest all of the elements of the instant invention. Withdrawal of the rejection is warranted and respectfully requested.

Rejections under 35 USC §§102/103

Claims 3 and 13 are rejected under 35 USC §102(b) as being anticipated by or in the alternative under 35 USC §103(a) as being obvious over Sargent '850.

This rejection is traversed for the following reasons.

Claims 3 and 13 both depend from claim 1. Sargent '850 fails to disclose or suggest the triazine compound claimed in claim 1. Thus, Sargent '850 cannot anticipate nor can it render obvious the instant invention. Withdrawal of the rejection is warranted and respectfully requested.

Rejections under 35 USC §103

Claims 1, 2, 10, 12 and 13 are rejected under 35 USC §103(a) as being unpatentable over JP '175 (JP 59 150175) or Kato '003 (US Patent No. 5,349,003) in view of Pacifici '328 (US Patent No. 5,843,328).

Claim 5 is rejected under 35 USC §103(a) as being unpatentable over JP '175 in view of Pacifici '328 and further in view of Kubo '175 (US Patent No. 5,883,175).

Claim 5 is rejected under 35 USC §103(a) as being unpatentable over Sargent '850 in view of Kubo '175.

Claims 1, 2, 10, 12, 13 and 14 are rejected under 35 USC §103(a) as being unpatentable over Amimoto '991 (US Patent No. 5,143,991) in view of Kato '003 and Pacifici '328.

Claim 12 is rejected under 35 USC §103(a) as being unpatentable over Sargent '850.

These rejections are traversed for the following reasons.

Present Invention

The present invention as recited in claim 1 relates to a carpet comprising a stainproof-treated textile, wherein the carpet has a stainproof ratio defined below of at least 30 %:

Stainproof ratio (%) = $100 \times (\Delta E_N - \Delta E_{Tn}) / E_N$, wherein

ΔE_N is the color difference after a stainproof test of untreated carpet;

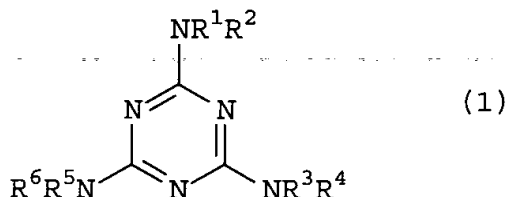
ΔE_N is the color difference after a stainproof test of carpet treated by the stainproof agent; and

n is the number of cleanings conducted according to AATCC-138 and $n \leq 20$;

wherein the carpet is treated with a stainproofing agent composition for carpet consisting essentially of:

(1) a fluorine-containing stainproofing agent consisting essentially of a fluoroalkyl-containing compound; and

(2) a triazine ring-containing crosslinking agent represented by formula (1)



wherein R^1 to R^6 are the same or different and represent -H, -OH, -CH₂OCH₃, -CH₂OH, -CH₂CH₂OH, -CH₂CH₂CH₂OH, or CH₂OC₂H₅; and

(3) at least one of a catalyst and an additive,

wherein the catalyst is selected from the group consisting of organic carboxylic acids; organic carboxylates between the organic carboxylic acids and ammonium, sodium, or potassium; inorganic acids; inorganic acid salts between the inorganic acids and ammonium, sodium, potassium, magnesium, zinc, aluminum, or iron; and

wherein the additive is selected from the group consisting of insect repellents, flame retardants, antistatic agents, dye fixing agents, wrinkle inhibitors, softeners and stain block agents which inhibit adhesion of acid dye.

Disclosure of JP '175

JP '175 discloses a urea or urethane compound with at least two ethylene imine groups that are essential. The fiber made in JP '175 includes yarns, woven, knitted and non-woven fabrics, which are used for ski pants, a windbreaker, golf wear, etc. Further, JP '175 discloses in lines 8-10 of the upper column of page 3 that triazine ring-containing compounds have an effect of improving a stitch staggering-resistance. It further says that this stitch is required as a product characteristic. JP '175 discloses a specific urea compound that is not required in the

instant invention. JP '175 reports that this specific urea compound (along with a triazine compound) are required to improve durability. The present independent claim 1 excludes this urea compound.

JP '175 does not disclose that the fiber of JP '175 is applicable to a carpet. JP '175 also fails to disclose the stainproofing agent composition of the present invention.

Disclosure of Kato '003

Kato '033 discloses an aqueous fluorine-containing polymer dispersion having particle diameters of 0.05-3 μ m. These fluorine-containing polymer dispersions are obtainable by emulsion-polymerizing 5-95 parts by weight of a monomer mixture. The monomer mixture consists of at least one monomer selected from the group consisting of alkyl acrylates whose alkyl groups have 1-18 carbon atoms and alkyl methacrylates whose alkyl groups have 1-18 carbon atoms and optionally an ethylenically unsaturated compound copolymerizable with the alkyl acrylates and the alkyl methacrylates. These compounds are present in an aqueous medium in the presence of 100 parts by weight of particles of a vinylidene fluoride polymer and an aqueous dispersion containing a fluorine-containing polymer which is present in an amount that is 95-30 parts by weight (in terms of solids content) of said aqueous fluorine-containing polymer

dispersion and 5-70 parts by weight (in terms of solids content) of an aqueous dispersion of a water-soluble resin and/or a water-dispersible resin. These aqueous dispersions can be used as a coating composition for fiber-treating compounds, a paper-processing compound, or a floor-coating compound.

Kato '003 discloses a monomer mixture that is not required in the instant invention. Kato '003 reports that this monomer mixture is required for stain removability. The present independent claim 1 excludes this monomer mixture.

Disclosure of Pacifici '328

Pacifici '328 discloses a protective finishing composition as well as methods of manufacturing such compositions for finishing carpet products. The composition in Pacifici '328 has a stainblocker and fluorocarbon-based repellent which can be made in a one-step process. This process includes first adding a naphthalene sulfonated salt to either a stainblocker or a fluorocarbon-based repellent and then adding the combination to the chemical not originally mixed with the naphthalene sulfonated salt.

Pacifici '328 does not disclose the stainproofing agent composition of the present invention.

Disclosure of Kubo '175

Kubo '175 discloses a stainproofing composition having water and oil-repellency, containing a polymer emulsion prepared by dissolving at least one polyfluoroalkyl group-containing compound selected from the group consisting of a polyfluoroalkyl group-containing (meth)acrylate polymer, a polyfluoroalkyl group-containing polyester, a polyfluoroalkyl group-containing maleate and a polyfluoroalkyl group-containing fumarate in at least one monomer selected from the group consisting of a (meth)acrylate ester, a vinyl ester, a styrene compound and vinylidene chloride, vinyl chloride. Then, the resultant solution is emulsified in water to prepare an oil-in-water emulsion, then polymerized. The resulting emulsion exhibits water- and oil-repellency and stainproof properties.

Kubo '175 fails to disclose the stainproofing agent composition of the present invention.

Disclosure of Amimoto '991

Amimoto '991 discloses a copolymer comprising (a) an acrylate or methacrylate having a fluoroalkyl group, (b) a polyalkylene glycol acrylate or methacrylate, (c) an acrylate or methacrylate having a hydroxyl group, and (d) at least one compound selected from the group consisting of alkyl acrylates, alkyl methacrylates and butadiene. The resulting copolymer

imparts water and oil repellency and soil-releasability to fabrics.

Amimoto '991 discloses a four-part mixture that is not required in the instant invention. Amimoto '991 reports that this four-part mixture is necessary. The present independent claim 1 excludes this four-part mixture. Thus, Amimoto '991 fails to disclose the stainproofing agent composition of the present invention.

Disclosure of Sargent '850

Sargent '850 discloses what are said to be permanently stain resistant nylon and cellulosic fibers, and a method to impart this permanent stain resistance to polyamide or cellulosic fibers. The method of Sargent '850 employs covalently binding a stain resistant composition to a linking compound that has been covalently attached to the fiber. The invention of Sargent '850 is said to represent a significant advance in the art of textile treatments in that the covalently linked stain resist treatment is not removed after a series of alkaline shampoos. The invention of Sargent '850 is said to be particularly useful in the preparation of commercial grade carpets for heavy traffic areas that will not lose their stain resistance after frequent shampooing.

Removal of the Rejections over JP '175 Kato '003 Pacifici '328
Kubo '175 Sargent '850 Amimoto '991 and Pacifici '328

The Examiner is again reminded that the transitional language "consisting essentially of" imparts a claim scope that excludes components that materially affect the basis and novel characteristics of the composition. See MPEP § 2111.03.

JP '175 discloses a composition comprising an urea group or an urethane group compound containing two or more ethyleneimino groups as an essential component (see claim 1 of the English translation of JP '175).

When one compares Example 2 with comparative example 6 (without the ethyleneurea compound) in Table VI of JP '175, the ethyleneurea compound is essential for superior seam shift resistance.

Thus, JP '175 does not disclose or suggest the carpet of the instant invention having excellent stainproof properties without using an urea group or an urethane group compound containing two or more ethyleneimino groups.

Kato '003 discloses a copolymer prepared by seed polymerization of a vinylidene fluoride polymer particle with at least one monomer of alkyl acrylate and alkyl methacrylate. The copolymer of Kato '003, having no fluoroalkyl group, is clearly

different from the fluoroalkyl-containing compound of the invention.

In contrast, claim 1 of the instant invention is directed to a carpet treated with a stainproofing agent composition for carpet consisting essentially of

- 1) a fluorine-containing stainproofing agent consisting essentially of a fluoroalkyl-containing compound;
- 2) a triazine ring-containing crosslinking agent represented by formula (1); and
- 3) at least one of a catalyst and an additive.

Please see the disclosure of Kato '003 at column 1, lines 43 to 50 as well as table 1, comparative example 1. At column 1, lines 43 to 50, it is explained that the fluororesins have many drawbacks in film formability, physical properties, etc. Also, at column 9, lines 37-40 Kato '003 states

It is appreciated from Table 1 that the aqueous vinylidene fluoride polymer dispersion is inferior to the aqueous fluorine-containing polymer dispersion of this invention.

The instant invention does not have the problems associated with film formability, physical properties, etc. that are encountered in Kato '003. The instant invention provides a carpet with superior stainproof properties and cleaning durability, although the carpet is treated with fluororesins without additives. The addition of acrylates or methacrylate is essential in Kato '003

to achieve its desired results but not essential in the instant invention. In other words, because fluororesin is used in the present invention, the stainproofing property is superior to that of Kato '003 using fluororesin treated with acrylate or methacrylate, which deteriorate the stainproof properties. Thus, the instantly claimed invention is patentable over Kato '003.

Claim 12 depends from claim 1. Sargent '850 fails to disclose or suggest the triazine compound claimed in claim 1. Thus, Sargent '850 cannot render obvious claim 12. Withdrawal of the rejection is warranted and respectfully requested

For the above reasons, Applicants submit all of the rejections have been obviated either for a failure to disclose all of the elements of the instant invention or for requiring additional components that are not required in the instant invention. Because the claims of the instant invention employ the transitional language "consisting essentially of", components that materially affect the composition are excluded in the instant invention. Applicants have shown that there are additional components in all of the references that materially affect the composition, or alternatively, Applicants have shown that all of the features of the instant invention are not present in the references for each of the rejections. Thus, at least one element of the present invention is not present in the

combined references and the Examiner in each instance fails to establish prima facie obviousness of the claimed invention. Accordingly, Applicants believe that all rejections have been obviated. Withdrawal of the rejections is warranted and respectfully requested.

With the above remarks and amendments, it is believed that the claims, as they now stand, define patentable subject matter such that a passage of the instant invention to allowance is warranted. A Notice to that effect is earnestly solicited.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicants respectfully petition for a one (1) month extension of time for filing a reply in connection with the present application, and the required fee of \$110.00 is attached hereto.

If any questions remain regarding the above matters, please contact Applicant's representative, T. Benjamin Schroeder (Reg. No. 50,990), in the Washington metropolitan area at the phone number listed below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

The claims have been amended as follows.

1. (Four times Amended) A carpet comprising a stainproof-treated textile, wherein the carpet has a stainproof ratio defined below of at least 30 %:

Stainproof ratio (%) = $100 \times (\Delta E_N - \Delta E_{Tn}) / E_N$, wherein

ΔE_N is the color difference after a stainproof test of untreated carpet;

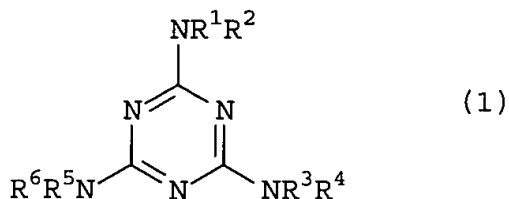
ΔE_N is the color difference after a stainproof test of carpet treated by the stainproof agent; and

n is the number of cleanings conducted according to AATCC-138 and $n \leq 20$;

wherein the carpet is treated with a stainproofing agent composition for carpet consisting essentially of:

(1) a fluorine-containing stainproofing agent consisting essentially of a fluoroalkyl-containing compound; and

(2) a triazine ring-containing crosslinking agent represented by formula (1)



wherein R^1 to R^6 are the same or different and represent -H, -OH, $-CH_2OCH_3$, $-CH_2OH$, $-CH_2CH_2OH$, $-CH_2CH_2CH_2OH$, or $CH_2OC_2H_5$; and

(3) at least one of a catalyst and an additive,

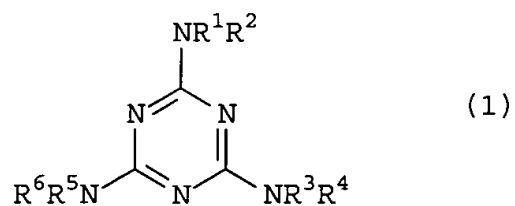
wherein the catalyst is selected from the group consisting of organic carboxylic acids; organic carboxylates between the organic carboxylic acids and ammonium, sodium, or potassium; inorganic acids; inorganic acid salts between the inorganic acids and ammonium, sodium, potassium, magnesium, zinc, aluminum, or iron; and

wherein the additive is selected from the group consisting of insect repellents, flame retardants, antistatic agents, dye fixing agents, wrinkle inhibitors, softeners and stain block agents which inhibit adhesion of acid dye.

10. (Twice Amended) A carpet treated with a stainproofing agent composition, consisting essentially of:

(2) a fluorine-containing stainproofing agent consisting essentially of a fluoroalkyl-containing compound and

(2) a triazine ring-containing crosslinking agent represented by formula (1)



wherein R¹ to R⁶ are the same or different and represent -H, -OH, -CH₂OCH₃, -CH₂OH, -CH₂CH₂OH, -CH₂CH₂CH₂OH, or CH₂OC₂H₅.